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2236.4	4455	5840	7373.333
2296	4490	5847	7400
2442.5	4495	5850	7440
2500	4500	5855	7450
2600	4510	5875	7487.5
2720	4525	6000	7500
2935	4600	6021	7506
3023.5	4695	6100	7537
3030	4742.5	6106	7706.66
3055	4750	6125	7740.000
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3450	5020	6440	8012
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3467	5166	6473.33	8015
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3522	5205	6506	8171
3532.5	5205	6522	8175
3560	5385	6540	8220
3630	5435	6550	8290
3840	5450	6583	8392
3885	5530	6625	8400
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**VK9WI:** Sundays, 0830 hours EST, simultaneously on 3650, 7146 and 14342 Kc. Individual frequency checks of Amateur Stations given when VK9WI is on the air.

# AMATEUR RADIO

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## EDITORIAL



### Television Interference and the Amateur Service

Prior to the introduction of the Australian television service the W.I.A. envisaged the probability of interference to viewers by Amateur transmitters, other frequency users and electrical apparatus generally. With this in mind it sought the opportunity to submit information to the Royal Commission on Television.

In actual fact the number of cases of interference by Amateur transmissions have, until recent date, been very few. However, over the past few months there has been quite an increase in t.v. interference, the majority of cases being due to 50 Mc. transmissions and also from v.h.f. and h.f. transmissions in fringe areas. The problem is essentially one of public relations—the manner in which the Amateur approaches the problem and the way in which the viewer receives his efforts to eliminate the interference.

There are two areas of interference—(a) areas essentially serviced by the existing television transmitters, and (b) areas which we call fringe areas not specifically serviced by the existing television transmitters. There are many forms of interference, of course, but our own transmissions which interfere with t.v. is our particular problem. As far as we are concerned our transmitters must be t.v. proofed, free from harmonic radiation and generally constructed and operated in such a manner that radiation of other than the desired frequency signal is not possible. That's fair enough and is in line with the regu-

lations governing the operation of Amateur transmitting stations.

But, unfortunately, the problem does not end there in actual practice, for under certain conditions interference is occurring—particularly around 50 Mc.—which is attributable to lack of selectivity in the t.v. receiver "front ends" rather than by reason of incorrect operation of the transmitting equipment. The problem is difficult enough in areas essentially serviced by the transmitting stations, but is greatly aggravated in fringe areas where the received t.v. signal is weak.

It is quite a problem to solve because on the one hand the public spend upwards of £150 in serviced areas and upwards of £400 in fringe areas and naturally enough consider they have the right to obtain interference-free reception; on the other hand the Amateur spends many hundreds of pounds and, providing he is satisfied that his equipment is operating within the conditions governing his license, he rightly considers he should be able to pursue the hobby in which he has participated over the years when there was no television service. In both cases the Postmaster-General's Department accepts a license fee (including fringe areas) but in the case of the Amateur it is £1 for some 3,800 license holders compared with £5 for thousands of t.v. viewers.

For the Amateur to adopt a "stand-over" attitude as much as to say, "I was here first," is fundamentally and democratically wrong. On the

(Continued on Page 13)

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# Modifying the AR8 Receiver

G. F. JENKINSON,\* VK3ZFA

THE purpose of this article is to describe some modifications to the well known R.A.A.F. AR8 Aircraft Receiver which the author has carried out and which have very considerably improved the performance. The main modifications are:-

- (1) Addition of a noise limiter.
- (2) Alteration of the audio system.
- (3) Addition of a magic eye and/or S meter.
- (4) Changes of valves in the h.f. unit.
- (5) Use of a Q multiplier.

## DETAILS

The first step is to disconnect the three front-panel controls which are not required for Amateur use. These are: "Traffic-DF-Sense" switch, "Sense Resistance," and "Bearing-Reciprocal" switch. The leads for the latter two can be disconnected and put out of the way, but the leads to the rotating contact and fixed contact which is used in the traffic position must be lifted clear and joined directly together. The "Traffic-DF-Sense" switch is not used in the following modifications, but can conveniently be used as a transmit-receive switch.

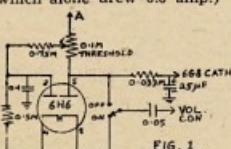
The two-pin outlet below the "M/F AE Tuning" knob is disconnected, and can be used as a speaker socket.

The bakelite aerial socket is replaced by a v.h.f. coaxial socket to allow coaxial cable to be used. However, this socket is such that a normal "banana" plug can be inserted if required.

The two power cable sockets can be conveniently removed and the lower hole be used with a more convenient type of power plug. The upper hole can be used for a magic eye (see modification 3).

## (1) NOISE LIMITER

This uses a 6H6 (or 6AL5) valve (see Fig. 1). This valve and most of the associated components can be mounted on a small bracket below the m.f. switch (band-change) and coils. The heater power for this valve and also the magic eye were obtained, in the author's receiver, from the supply which had originally fed the 6X5 front-end protection valve. (The heater line was left wired for 12V, and thus the 6H6 plus 6U5 magic eye drew 0.6 amp. and made up for the removal of the 6X5 which alone drew 0.6 amp.)



The "Bearing/Reciprocal" switch was used for the noise limiter on-off switch, and the "Sense-Resistance" pot. was replaced by one of 100K ohms and used for the threshold control.

\*61 Were St., Brighton Beach, S.S. Vic.

It should be noted that for good noise limiter performance the cathode bypass of the 6G8 audio amplifier should be increased from its original value of 0.05  $\mu$ F. to 10 or 25  $\mu$ F.

The connection to point A of Fig. 1 (i.e. to the bottom of the secondary of L.F.T.4 (T3) must be made to one of the terminals at the top of this transformer, as the transformer contains some resistors and capacitor in its cans, and the bottom terminals connect to point A through a resistor. An ohmmeter reading between 6G8 pin 5 and one of the "unused" terminals on the top of the last i.f. which reads 7 ohms, will give the terminal to use.

A coax cable is run from the point found above, through a hole drilled in the chassis for the purpose, to the threshold pot. on the front panel.

The shielded lead to the tag, one around clockwise from the tag connected to the plate of the last 6T7G on the last i.f. transformer, should be disconnected (open-circuited) at this point or at the other end of the shielded cable.

This noise limiter circuit is the one which is used in the AR88 receiver and seems capable of giving very good results.

## (2) AUDIO MODIFICATIONS

To make up for a loss of audio gain caused by the noise limiter, the author added another audio stage after the 6G8. This was a 12SQ7, but with rearrangement of heater supplies other valves could be used, e.g. 6SQ7.

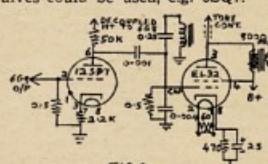


FIG. 2

The amplifier (see Fig. 2) is mounted on the socket previously occupied by the 6X5.

To drive a speaker more efficiently, the 6J7 output tube was changed to an EL32. The output transformer used for the 6J7 was removed completely. B+ and plate leads from the EL32 were run, in the author's receiver, to the loop aerial socket. (The output transformer was mounted on the speaker.)

The EL32 was chosen for the output valve because this requires only 0.2 amp. heater current, and thus the addition of a 60 ohm resistor across the heater socket connections was all that was needed to balance the heater current back to the correct value. (Circuit is given in Fig. 2.)

An audio filter was also added to the audio section (see Fig. 2). The choke used was a small speaker transformer with the paper removed from the air gap in the core and the plates interleaved. The value of capacitor is best

found experimentally. The filter in the author's receiver is a high-pass type with a low frequency cut-off of about 200 cycles. This improves the readability of weak signals.

## (3) MAGIC EYE and/or S METER

A magic eye (6U5/6G5) was mounted behind the spare hole on the front panel which resulted from the removal of the original "power" and junc. box" sockets. The 6U5/6G5, together with the 6H6 noise limiter, made up the heater current to the value originally taken by the 6X5. For circuit see Fig. 3a.

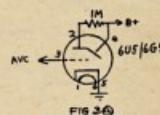


FIG. 3a

While the magic eye was useful, it was felt that an S meter would be more valuable. A simple meter measuring plate current was considered but rejected because it read backwards and only small section of the scale could be used. However, a glance at Fig. 3b will reveal that by using about three resistors and a pot, plus the meter, the S meter is forward reading, can be zero set to any desired level, uses the full scale, and can be set to any desired sensitivity (e.g. no signal reading zero, and full scale reading at \$9, or full scale at \$99!!!)

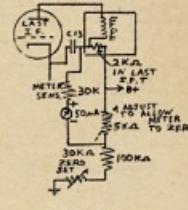


FIG. 3b

The meter used was a 50  $\mu$ A. temperature gauge. However, any sensitive meter could be used with slight resistor changes. The meter was mounted away from the receiver.

The zero-set pot. was mounted at a convenient point at the back of the receiver.

## (4) H.F. UNIT

It was felt that modern valves in this unit would improve the performance, and this was found to be the case.

Adaptors for plugging the miniature valves into the octal sockets were made by mounting the appropriate miniature socket on an octal plug (e.g. a discarded valve base).

Where the grid lead originally went to the valve cap, a flying lead was run from the adaptor to the appropriate tuning gang lug.



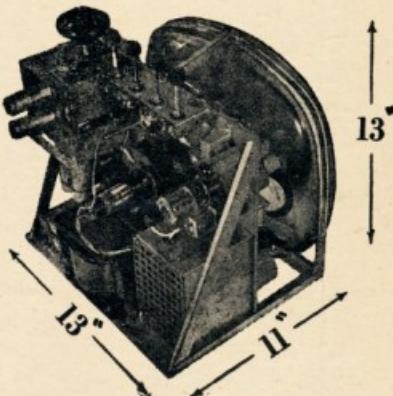
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# THE GELOSO RECEIVER FRONT END UNIT

WHEN ever a new Amateur receiver hits the Australian market, it always creates a lot of interest and curiosity. In this case the interest is two fold, as R. H. Cunningham Pty. Ltd. have not only released a new receiver, the Geloso G209-R, but also in kit form the coil box, tuning condenser with dial and drive mechanism, aerial trimmer, oscillator trimmer, and a 4.6 Mc. output transformer of this receiver. This kit can form the basis of a good receiver, either as a converter fed into any receiver that tunes 4.6 Mc., or as a front-end for a home-brew i.f. strip, detector, etc., and audio.

The Publications Committee have recently had the opportunity of testing one of these kits which had been built into the converter unit described here-with. We must admit that this is one of the more pleasant duties associated with producing the magazine.

Of course the first question everyone will ask is just how well does it perform? Sensitivity figures have been published on the 209-R receiver and naturally these figures apply also to this converter. Unfortunately, figures of this kind cannot always convey just how signals sound coming through the speaker. After an extended test on ten metres (how does your receiver sound on ten?), we can definitely say that it is in the "hot" class. Conditions on the band were anything but good. However, the signals there stood out well with

The actual dial drive is one of the neatest ideas seen for a long time. The shaft from the knob is actually a 5 to 1 ratio planetary drive. This is then coupled to a 4-inch drum by means of a nylon cord. One small criticism of the tuning is the size of the knob. One about twice the diameter is needed to give the right feel.

We fed the converter into receivers ranging from a 122 set and a Type 3 to an AR88. Naturally the selectivity characteristics and gain varied from set to set, but overall performance was essentially the same with all.

To sum up, several of the committee members were heard to comment, "You can leave one in my shack any time."

Although only the component parts are available at present, a complete kit for the converter unit, including power supply, chassis, cabinet, etc., will be obtainable at a later date.

We are indebted to R. H. Cunningham Pty. Ltd. for the opportunity of testing this fine unit.

## PUBLICATIONS COMMITTEE

### \*

MANY readers of "Amateur Radio" have, during the past two years, built the famous Geloso Exciter units into a transmitter and, at reasonable cost, have obtained excellent results with a "professional" finish. Now available in this country is the Geloso Receiver Front-End Unit, which is as used in the G209-R Double Conversion Superhet.

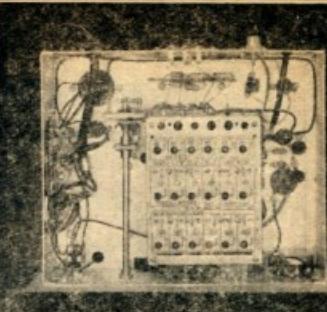
This unit consists of the following parts.—

- (1) Coil unit—type 2619;
- (2) Dial assembly—type 1649;
- (3) Variable gang condenser—type 2791;
- (4) I.F. Transformer—type 701/A;
- (5) Aerial trimmer condenser—type 8475;
- (6) Oscillator trimmer condenser—type 80173.

The coil unit itself is ready wired with valve holders, resistors, condensers, wavechange switching, etc., only requiring external connections for h.t., l.t., gang condenser, i.f. transformer, a.v.c. and serial. The i.f. is at 4.6 Mc. bringing the unit on to almost any shortwave receiver, and each Amateur band is spread to give the following frequency coverage:—

	10 Metres	28.0 to 30.0 Mc.	Band 1
11 "	26.0 to 28.0	"	2
15 "	21.0 to 21.5	"	3
20 "	14.0 to 14.4	"	4
40 "	7.0 to 7.3	"	5
80 "	3.5 to 4.0	"	6

A trimming adjustment is provided for every coil in the unit and is clearly marked with adjustment frequency figure. The unit can, if desired, be built directly into a receiver using a second mixer to convert to, say, 465 Kc., or may be assembled as a converter, and fed out at 4.6 Mc. to a receiver such as a BC348, BC342, or AR8.



The dial mechanism provides a 72:1 reduction from an epicyclic motion with a nylon cord drive. The cord is spring loaded, giving positive action and preventing backlash. No cut-and-try method of adjusting the drive cord is necessary as the exact length is supplied, correctly terminated on the loading spring.

The size of the coil unit is approximately 5½" x 4" x 3½" deep and is designed for mounting below a chassis. The dial is 8½" x 5" and the minimum panel height requirement for the assembly is 8½".

## THE CIRCUIT

This uses modern type valves—6BA6 (r.f. amplifier), 12AU7 (oscillator and buffer) and 6EE6 (mixer). One interesting feature is the employment of a double triode (12AU7) in the oscillator circuit. The first half is run as the oscillator and the second half as a cathode follower buffer stage. This prevents any pulling of the oscillator frequency by the aerial and mixer circuits.

Fig. 1 shows the complete circuit required to build a compact converter which will impart to an old receiver modern performance with an excellent signal-to-noise figure of better than 6 db. for 1 microvolt input.

The power requirement of the unit is 230 volts at 45 mA. with 150 volts and 6.3 volts a.c. of 1.65 amp. From Fig. 1 it will be seen that the 150 volt stabilised supply may be obtained from an OA2 valve.

A buffer stage (6C4) is included to provide a low impedance cathode follower output and permits a convenient connection to the antenna circuit of the following receiver by means of coaxial cable (maximum length, 80 inches).

An r.f. gain control is provided on the unit, consisting of a variable negative voltage of -1.7 to -20 volts.

An interesting feature of the circuit is the provision of an additional wafer at the rear of the coil unit for adjusting the screen voltage to the 6BA6 r.f. amplifier valve. It will be appreciated that the performance of most valves is better at 3.5 Mc. than at 30 Mc. and this ensures that the sensitivity of the unit is the same on every band, and is invaluable for correctly calibrating an S-meter.

## MAKING THE COMPLETE CONVERTER

The design using the Geloso coil unit and dial assembly shown in the photographs was based upon a 18 s.w.g. aluminium chassis 10" x 8" x 3½" deep and front panel of 11" x 9¾". The coil



Prototype of the Geloso Receiver Front End Unit.

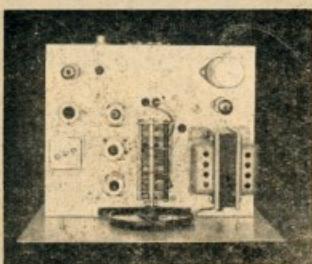
Controls (left to right): R.F. gain, tuning, band selector, aerial trimmer, h.t. switch.

little background noise. This test was made on a wire antenna and not a beam. Frequency stability was adequate for good s.s.b. reception on 10 and 15 metres. Naturally though, this is dependent on just how well you build this unit in, and how stable is the receiver the converter is fed into.

For the sideband enthusiasts the tuning rate will be of interest. The following figures apply to Australian frequency band allocations: 80 metres, 19 turns; 40 metres, 15½ turns; 20 metres, 26½ turns; 15 metres, 26 turns; 11 metres, 4 turns; and 10 metres, 32 turns.

unit is mounted below chassis, cutouts are made for the valve-holder skirts to protrude through the top of the chassis. Holes are required for the coil unit connections to pass through the chassis to the gang condenser, mounted on top of the chassis.

The general layout of the other components can be seen in the photographs and their exact position can be determined by the user.



#### ASSEMBLY

First mount and wire all components with the exception of the coil unit, tuning condenser, dial and front panel. The epicyclic drive can now be mounted on a bracket and before screwing the bracket under the chassis slip two turns of drive cord over the drive spindle and locate them around the thin section of the spindle, immediately in front of the brass bush. Mount tuning condenser on feet and secure to top of chassis. Fit in coil unit and antenna trimmer on bracket under chassis. The remainder of the wiring can now be completed. The front panel can be secured in position and the dial mounted. Before fitting the escutcheon to the dial, mount the dial light assembly and push the pointer into position on the tuning condenser spindle. Make sure that the pointer is horizontal at just below 28. Mc. with the condenser vanes fully in mesh. Check that the dial drum is correctly located on the condenser spindle and that the pointer will turn 180°.

#### TESTING AND ALIGNMENT

Check all wiring and fit valves. Connect the output of the converter to the serial input of the receiver and tune to 4.6 Mc. Connect the converter to mains and switch on.

At this stage it would be advisable to check voltage points in the converter. H.t. +230 v., stabilised h.t., screen 6BA6 network, and heaters.

All coil units are checked by the manufacturer before despatch and are usually not very far off. Alignment can best be accomplished by using a signal generator, but this is by no means an absolute necessity if a local transmitter can give a few "spot" frequencies on different bands—or a good station frequency meter is available. In the latter case, an aerial should be connected to

the aerial socket in place of a signal generator.

Commence by feeding 4.6 Mc. into the converter and peaking the i.f. transformer, then adjust the 4.6 Mc. trap for maximum attenuation. The remainder of the alignment procedure is quite straight forward as all the spot alignment frequencies are clearly marked at their respective trimmers or coil slugs on the underside of the coil unit.

Alignment should be done with the antenna trimmer in the mid position.

#### A.V.C. CONNECTION

If the user so desires, a.v.c. from their existing receiver may be connected to the converter. This can be accomplished to give maximum results by

retaining manual r.f. gain on the 6BA6 r.f. stage and applying a.v.c. to the 6BE6 mixer.

#### CONCLUSION

This new receiver front-end will improve the performance of many existing receivers. It combines the advantage of a double conversion circuit with improved signal-to-noise figures and increased sensitivity. The bandspread will really be appreciated by the operator with that good "surplus" receiver which lacks the bandspread on Amateur bands. So, with the availability of this unit, we can get performance at least equivalent to, if not better than, many modern communications receivers.

—H. V. Amor, VK3RD.

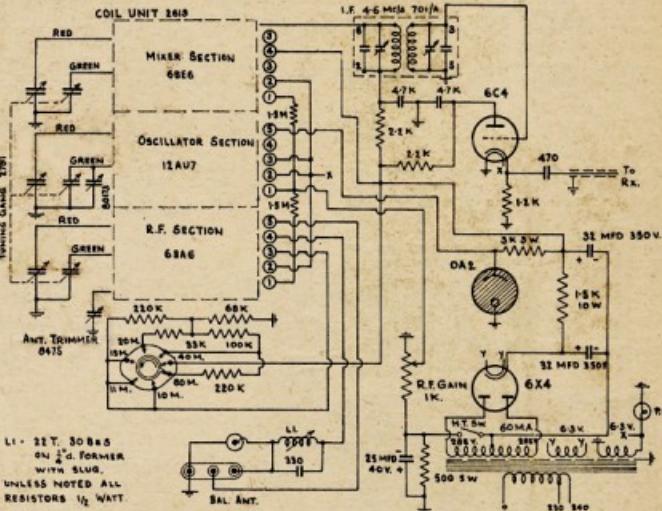


FIG. 1.

The modern practice of leaving the oscillator running during stand-by periods is a suggested amendment to the above circuit.

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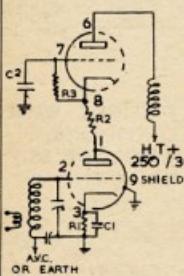
# The S-9'er Mark II.

THE magazine "CQ" in May 1956 carried an article on the S-9'er, which used a 9-pin miniature t.v. cascode twin-triode, the 6BK7A, to replace and plug into the r.f. stage of any receiver using a 6SK7 or the like. This was a cathode coupled amplifier which gave excellent results noisewise, with some loss of gain and a few reports of instability.

"CQ" for May 1959, pages 44 and 45, introduced the S-9'er, Mark II., written by K5JKX, which converts the pentode r.f. stage into the cascode the twin-triode tube was designed for. Gain in this case was claimed to be equal to the replaced pentode, in fact in some cases better, and the stability was quite good.

I made up both of these models and gave them a solid try-out, and without any doubt the Mark II. version more than lived up to the claims made for it. It has been tried in at least a dozen receivers, both commercial and home-brew, and the gain in at least two-thirds of them was increased by 6 db, and the improvement in signal-to-noise was immediately apparent on them all. Some instability was noticed in four of the receivers, but it was immediately cured by earthing the valve can, as suggested in the article.

## CIRCUIT DIAGRAM



Base and socket connections are bottom views. When replacing a 6D6, find which heater pin is earthed and connect to pin 9 on noval socket. The same applies to types 6K7G, 6U7G, etc., and for 6K7 metal, if pin 1 is earthed use this instead. Insulate all leads between noval socket and base with spaghetti sleeving.

Component values: R1=100 ohms 1/2W. carbon; R2=33 ohms 1/2W. carbon; R3=470K ohms 1/2W. carbon. C1 and C2=0.001 μF. disc.

Components of the Mark II. include three resistors, two capacitors, a tube socket, an adaptor base and of course the tube. Any of the cascode designed twin-triodes will work well in the circuit, such as the 6BK7A, 6BQ7A, 6BZ7, and the 6BS8. This latter tube gives the best results mainly because of its freedom from cross-modulation and its extra gain.

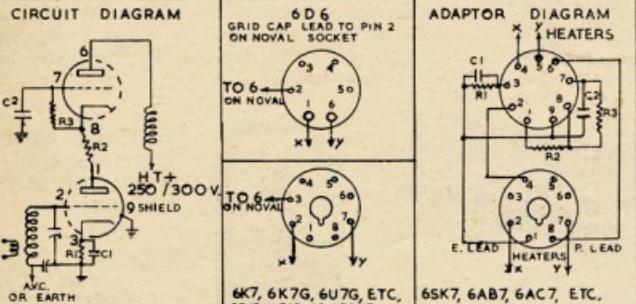
With respect to the circuit, whilst measurements will show the difference between a coil-neutralised cascode and one using merely a 33 ohm resistor between stages, no difference can be detected in on-the-air tests and for that reason and also to simplify the adaptor, the resistor was used.

It will be noted from the circuit that the cathode of the first section is returned directly to ground through pin one of the octal-based socket, thus removing the r.f. stage of the receiver from the normal gain control line and converting the gain control into a purely i.f. gain control, resulting in still more signal-to-noise ratio improvement.

If manual control of the first stage gain is desired, resistor R1 and capacitor C1 can be omitted and a lead run directly from pin five of the noval socket to pin five of the octal base, which will retain the original r.f. cathode circuitry. I personally tried both these connections and felt that the difference, if any, was not worth bothering about, and therefore the saving of two components is worth considering.

Well, now the pretence is over. This is not a technical article in the true sense, it is simple a re-write of an article in "CQ" which is without doubt a winner and nothing now remains but to give a few helpful hints gleaned from my actual experience with the converter in the thought that it may help to answer any remaining queries that might be in your mind.

Not all twin-triode tubes are worth using in the converter, for example the



In closing, I would like to say that I don't want to talk you into making this converter up if you are satisfied with your present receiver's r.f. stage. If, however, you are looking for an improved signal-to-noise ratio, with no loss in gain, and a chance of some increase in gain, then this is it. The only catch to the whole set-up, as I see it, is whether or not you can get hold of a suitable tube. All of the tubes mentioned are listed in the latest tube manuals, but as they explain, that does not mean they are as yet available.

My thanks to K5JKX for a very interesting article and the opportunity to spend a number of pleasant hours testing the truth of his assertions.

—Warwick W. Parsons, VK3PS.

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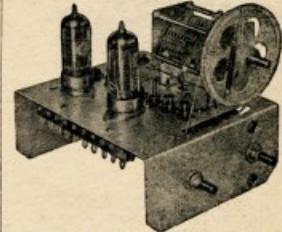
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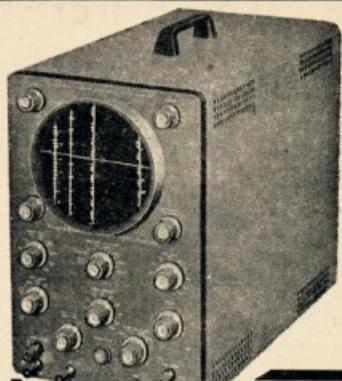
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# GENEVA REPORT

SINCE my last report to you I have every reason to believe that the delegations at the Administrative Radio Conference in Geneva have been working very hard in pursuit of satisfactory agreements to all the problems being raised by the various countries—and there are plenty of problems.

As I mentioned previously, a great amount of information from the Conference is of a sub judice nature and I must ask you—as Australian Amateurs and members of the Wireless Institute of Australia—to believe me when I say that everything possible is being done at Geneva by Amateurs representative of many countries to maintain the Amateur frequency allocations insofar as that is possible against the extreme pressure from the commercial interests.

I can say this quite definitely, that the finalising of frequency allocations is a continuous process in which the entire spectrum is first of all reviewed in Committee Four (the Frequency Allocation Committee) and then sent to various working groups which study small portions, iron out differences and attempt to accommodate as many proposals as possible. From reading the pages of reports sent back to me from John Moyle, it is becoming increasingly evident that the pressures for more frequency space by all services in all countries is becoming greater as the Conference progresses and the full story will not be really known until the Conference is over and our representative returns to report personally to us.

It is quite useless, and most unwise, to make public a running statement on the progress of the various committees and working groups because the same ground is gone over many times and the decisions of any one group are often completely upset and re-opened at a later stage. Often lines of thought develop into discussions of a highly confidential nature in which the most delicate balances and confidences are involved. It is quite evident that the full picture will not be known until the end of the Conference, so it is not possible to forecast the final result or give final information at this stage.

However, initial decisions indicate that Amateurs in Region III. will probably lose 100 kc. off the top end of the 3.5 Mc. band, but the resultant band 3.5 to 3.7 Mc. will be exclusively an Amateur assignment whereas before it was shared with fixed and mobile services.

The 7 Mc. band is being hard pressed by all countries in all Regions for an exclusive Amateur assignment 7 to 7.1 Mc. and it is probably true to say that a footnote will be added that it is an exclusive assignment to the Amateur Service on a world wide basis and that countries will remove existing transmissions from this part of the spectrum. If this is the final result—and this is by no means certain—then we can expect to be in a better position than we were prior to the Conference.

An international telegram from John Moyle a few days ago stated that Australia has agreed to withdraw its proposal to reduce the 14 Mc. band currently used by the Amateur Service on a world wide basis. This is not a surprise because we forecast before the Conference commenced that it would quite possibly never get through the Geneva Conference and this was substantiated by members of the Frequency Allocations Sub-Committee at meetings which I attended with other members of the Federal Executive. As has been said so often during the past many months, the initial proposed frequency curtailments were only proposals and would have to be widely discussed by all countries before we could have lost them. Even now, the present position could change overnight, but it is heartening to know that at least initially Australia has agreed to withdraw its proposal regarding the most important DX band assigned to Amateurs.

Despite the pressure for frequency space in the bands between 3 and 30 Mc., there does not seem any likelihood that changes will be made to the present 21 Mc. band. The 28 Mc. band will also probably remain at 28 to 29.75 Mc. which is officially what Region III. has always had although the Australian Administration has permitted us to use up to 30 Mc. in the past.

As at the last report I received from Geneva, only preliminary discussions had taken place on the bands above 30 Mc. and there is nothing to report at this stage.

Looking at John's reports in retrospect, I am satisfied that the money raised to send our own representative to Geneva has been far from wasted, and the knowledge gained at a Conference of this nature will have been well worth the cost by the time the Conference concludes.

As John Moyle says, and I quote from part of one of his reports, "When extreme pressures are at work, particularly in the bands between 3 and 30 Mc., there isn't much sentiment where national interests are involved, and discussions frequently are converted into major political issues in the big plenary sessions. At the moment of writing there are more than 60 separate committees and groups functioning, and others are created and closed almost every day. The task of following even those in which we are mainly interested is very great, and it has been an education to me which I hope will be completely invaluable in helping us to understand and then handle our problems in the future."

You will recall from my earlier report to you that part of our brief for John Moyle was to investigate more fully the position of the International Amateur Radio Union today and what could be expected of it in the future.

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At a meeting of some 60 Amateurs, he had the opportunity to discuss the I.A.R.U. and reports that he made quite a long speech concerning Region III.'s outlook and what should be expected of the Union during the next eleven years. John reports that he will have quite a lot to say about the I.A.R.U. when he returns.

I hope in the near future to be able to give you a more definite report on the probable outcome of the Conference where our bands are concerned. In the meantime I would ask you to try and appreciate the sub judice nature of proceedings at this stage and the danger of making public statements until confirmation of the final position is made known.

G. MAXWELL HULL,  
Federal President, W.I.A.

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# "JUST LIKE 'QST' EXCEPT . . ."

## Some Hints on the Stabilisation of Tetrode and Pentode Amplifiers

EDWARD P. TILTON, W1HDX

THE four words of our title are encountered almost daily in mail handled by the A.R.R.L. Technical Information Service. They are also voiced frequently by visitors to the A.R.R.L. Lab., who tell us their troubles with equipment they've been building. Often it turns out that instability trouble these fellows have is the result of common misconceptions as to right and wrong methods of bypassing and grounding in tetrode and pentode amplifiers.

We neither expect nor want everything built from "QST" and the Handbook information to be exact duplication of the original. To be of greatest value, equipment descriptions should be used for ideas to be incorporated in gear of your own design. If "QST" and Handbook articles were used only for exact duplication they would not be making the most of the time and money spent on them. The important thing is to know what to change, and what to leave as the original designer made it. Methods employed in bypassing and grounding should be in the latter category.

To some extent each new amplifier represents a design problem. We would not have you believe that every transmitter or converter built in the Headquarters lab. is stable right from the start. But from long experience we have become well acquainted with some of the more common forms of instability. These have all been discussed at one time or another, but a summary may still be in order, especially in view of the fact that assembly details we will be talking about often do not come through well in photographs. Even an experienced builder of Ham gear may find it hard to know just where to put a by-pass lead or a grounding lug, no matter how well the pictorial and descriptive details are set forth in print.

Certain tubes have a reputation of being hard to tame. The 807 was such a dog for many Hams for years, and the evil reputation it built up, largely unjustified, is now inherited (with even less justification) by the 6146. It is true that tetrode and pentode tubes, having very high power sensitivity, may require neutralisation, but more often than not the trickiness involved in getting an amplifier to operate stably is the result of violation, by the designer, of certain cardinal principles. If you yearn for the "good old days" of easily neutralised triode amplifiers it may be that you've been building in some troubles for yourself.

### PUT THE SOCKET ABOVE THE CHASSIS!

Many a lab. headache has been relieved like magic by the simple expedient of taking out a socket that was mounted below the chassis and putting

it on the tube side of the chassis or mounting plate. This became really important when we started building transmitters that had to work on many bands without readjustment of neutralisation. Cause of the oscillation trouble is often the long plate-cathode return. This return cannot be made effectively via screws going through the chassis. The actual path (and you can often trace it by chassis "hot" spots) is around the edge of the chassis, or through some large hole. Some considerable portion of the chassis thus becomes common to both plate and grid circuits, and the resultant feedback is difficult to neutralise out.



Models illustrating right and wrong methods for bypassing and grounding terminals of a 9-pin miniature socket. Both show Pins 4 and 9 grounded, with a cathode resistor and associated bypass capacitor connected to Pin 3. On the wrong (left) model, Pin 4 is bent from the 9 pin towards the centre shield and Pin 4 is not grounded but the bypass is made from Pin 3 to the centre shield, making its path to ground common with other circuits. In the example at the right, the pins to be grounded and the ground lug itself are bent tightly against the cylinder and soldered in place. Bypass is grounded at the bottom of the lug.

This sort of thing may not be troublesome in an amplifier designed for a single band, though even here it may make the neutralisation job fussier than it should be. But in an amplifier for several bands the effect of coupling through common ground paths varies with frequency. Your amplifier requires neutralisation on some bands but not on others, or the degree of neutralisation cannot be set up right for several different bands. Having gone through this with more amplifiers than we care to recall, we now put the sockets atop the chassis first, instead of making ourselves an almost certain revamping job by mounting it in the "conventional" manner.

### COOLING DOWN THE SCREEN

Once the socket is mounted above the chassis the method of bypassing is still important. The screen and cathode must be at zero r.f. potential or there's going to be trouble. The screen is the villain in some amplifiers that should be stable but aren't. To cool it off, bypass right at the screen terminal or terminals. If there is more than one screen pin, bypass each one separately right to the chassis, with no leads. Forget the old precept of a common ground bus, or a common grounding point. The chassis is the place to go with bypasses, and without any wandering!

Ordinary bypassing may be ineffective in v.h.f. amplifiers, especially for

144 Mc. and higher. Then some form of screen tuning becomes necessary. Examples will be found in all recent editions of the Handbook. Such circuits usually involve series-resonating the screen circuit to ground, to provide a path of lowest possible impedance.

Occasionally you will find a circuit in "QST" or the Handbook in which no screen bypass is shown. These bring inquiries as to whether an error was made, and what value bypass should be used. Diagram readers are accustomed to seeing screens bypassed, and they can't imagine it not being done. Sometimes the circuit is a frequency multiplier, and in that case it doesn't make much difference whether the

screen is cold or not. Why waste a capacitor, in that event? At 220 and 420 Mc. several factors come into play that may make screen bypassing unnecessary. The screen-to-ground capacitance within the tube may be enough to do the job at these frequencies. More important, degeneration due to cathode lead inductance, and loading of the tuned circuits by the tube, may cut the power sensitivity of the amplifier to the point where self-oscillation is not the problem it is on lower bands.

### THE HOT CATHODE

Oscillation troubles are often built into tetrode or pentode amplifiers by inserting a keying jack in the cathode lead. The cathode has to be cold, too; perhaps even more so than the screen. In the 50 and 144 Mc. excitors in the Handbook you'll notice that the 50 Mc. job has cathode keying; the 144 Mc. one does not. That's because small disk ceramics (probably the best v.h.f. bypasses available at low cost) are effective at 50 but not at 144 Mc. That 144 Mc. cathode (2E26 or 6146) could probably be cooled down by some special circuit tricks, but we found it simpler to resort to some other method of keying, and left the cathode grounded by the shortest possible lead, in the rig for the higher band. Grounding each cathode lead separately may be desirable with the 2E26 and 6146.

## BYPASSES THAT DON'T BYPASS

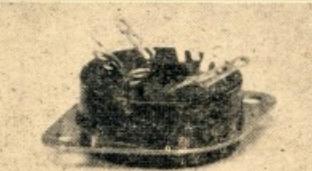
Oscillation troubles are not confined to transmitters, as any v.h.f. converter builder knows. And oscillation is not always where you'd expect to find it—in a pentode or neutralised-triode amplifier stage. We've seen quite a few "grounded-grid" stages that took off all over the place because the grid was not actually grounded. In several instances a wire lead was run from the cylindrical shield in the centre of a miniature socket to a ground lug at one or both sides of the socket. Bypass capacitor leads were connected to the cylinder, or to some point along the wire, rather than to the lug, right at the chassis.

The effect of r.f. voltage building up on a ground lead, perhaps no more than a quarter inch long, can be observed by running the stage in an oscillating condition, and then probing for hot spots with a pencil lead. If the stage is in a receiver, you can listen for scratching sounds. If it is a transmitter, watch the grid current in the offending stage.

least two hassles with sockets of this type in recent lab. experience, but this writer will have no more!

Quite a bit of new manufactured gear employs a device that was all but discarded years ago, the so-called wafer socket. In the days of the "low-loss" insulation craze we looked down our noses at anything but ceramic insulation. Now we know that most other insulating materials are good enough, at least in low-voltage applications, and that the physical construction of the socket as to lead lengths may be more important. The flat wafer socket has a distinct advantage in this respect. If the chassis is a material that will take solder readily, socket terminals to be grounded can be soldered directly to the chassis, resulting in much lower lead inductance than is possible with bulkier ceramic or moulded bakelite sockets.

From all this discussion it can be seen that there are more causes of instability than first meet the eye. With triodes the main cause of oscillation is



Tube socket with built-in grounding ring and four lugs (left) is an invitation to trouble due to common ground paths. Flange between lugs may not contact chassis, in which case connections made to lugs have long path to ground. Socket at the right necessitates grounding to chassis or to lugs under mounting nuts, making it possible to avoid common ground paths.

In a 50 Mc. transmitter built for the 1959 edition of the A.R.R.L. Handbook we ran into trouble with a 6146 stage that refused to neutralise. We tried several methods; each would come close, but not quite do the job. In this rig we had abandoned the principle discussed earlier and mounted the tube socket below the chassis, primarily to save over-all height. With just one band to worry about, we felt the calculated risk worth taking.

In this amplifier both the screen and cathode leads were hot. Touching the screen or cathode terminals caused a flicker in the small amount of grid current that persisted in the 6146 stage, when drive was removed. In desperation we pulled out the socket and put a different type in its place—and at once the capacity-bridge neutralisation system we'd been wrestling with for days neutralised the stage out as easily as anything we've ever worked with.

The cause of all the trouble was the same old bugaboo, common ground paths, in a somewhat different form. The socket was a popular make having a metal grounding ring in a slightly different plane from the ears that mount the socket to the chassis. There are four lugs extending from the ring that are intended for grounding points. They may be suitable for that purpose at lower frequencies, but in a v.h.f. amplifier the lugs and ring provide a built-in common path for the circuits grounded or bypassed thereto. We've had at

the considerable grid-plate capacitance of the tube or tubes. We neutralise this out with a capacitance that is approximately the same as the tube grid-plate capacitance, feeding back energy 180 degrees out of phase with that fed through the tube, and the job is done. The power sensitivity of triode tubes is low, so the neutralisation process is fairly routine. (We didn't think so back in the '30s, however!)

Tetrodes and pentodes have additional tube elements that keep their grid-plate capacitance at a very low value, usually under 0.1 pF. This in itself is seldom enough to cause trouble, but our layouts usually add other kinds of feedback. If we don't shield or otherwise isolate the input and output circuits there may be fairly large values of coupling between them, by inductive or capacitive means. Power leads, unless carefully decoupled, may provide common coupling. But even a perfectly shielded amplifier with adequate lead filtering can still have common coupling between the input and output circuits through the ineffective bypassing and grounding techniques outlined above.

And when all these factors are taken care of we still have parasitic resonances—but this started out to be a discussion of bypassing and grounding techniques. Squelching parasitics is another story, and one that is already covered adequately in the Handbook.

## TECHNICAL TOPICS

### NETTING

HEARD on the 7 Mc. band quite frequently: "This is VK3XYZ standing by for VK5YZK". VK5YZK does not reply. "Another transmitter failure" we think. But no. Re-tuning we find VK5YZK 5 kc. higher in frequency.

Apparently in making contact one of these two stations has failed to net accurately and the result is:

1. They are occupying two channels instead of one in a crowded band.
2. Their contact may be broken up by a third station coming up on the temporarily vacant channel of the station listening.
3. In replying off-frequency, one station may have inadvertently dropped on an adjacent channel in use by a weaker station.

No good at all.

But why and how do they do it? My guess is that either:

1. They switch on the whole transmitter to net, thus blocking the receiver for 10 kc. either side and tune the v.f.o. until the blocked bandwidth straddles the frequency they wish to net, or
2. They net by tuning the v.f.o. dial to the same frequency read on the receiver dial.

The generally accepted accurate method of netting is to switch on only the oscillator tube of the v.f.o. or such low power stages that the signal can be heard in the receiver without blocking it and zero-beat it with the signal of the station being received. It may happen then that when the final stage comes on, it pulls the oscillator to a new frequency, but if this causes more than a hundred cycles or so change, then an additional isolating stage is required in the v.f.o.

The necessary switching arrangements to bring in the oscillator separately are not difficult to design, but there are a few catches. At the first attempt at my station, switching on the oscillator plate also brought on the screen of a later stage without the plate of that later stage and this does not tend to long life of tubes.

A method of checking whether the oscillator is pulled when the final comes on is as follows: First, listening in the receiver, zero-beat the frequency meter-monitor to the oscillator signal. Then switch on the final and listen in on the monitor to see whether it is still zero-beat.

—J.A.G.

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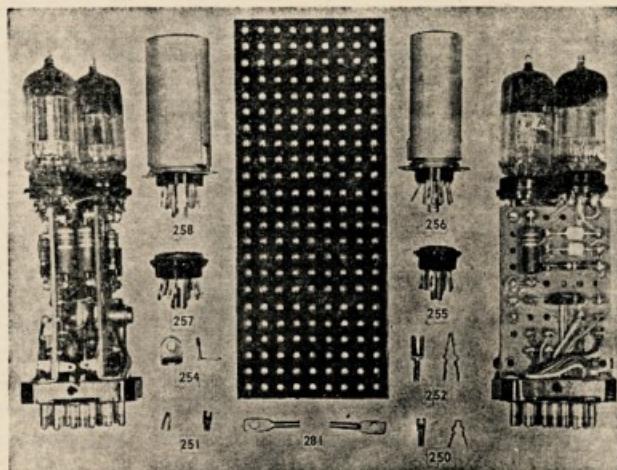
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# I.T.U. FUND DONATIONS

Donations to the I.T.U. Fund closed on 31st July, but some more donations are still being received. All donations are welcome as our objective of £2,500 was not quite reached although being very close to it. Federal Executive wish to express their very sincere and grateful thanks to all who contributed in any way. Many subscribed two and three times and indicates the enthusiastic support this appeal received.

Our representative, Mr. John Moyle, is now in Geneva and is at present representing the cause for which this appeal was made—the Australian Amateurs' interests. Although the results of this representation may eventually appear to be obscure on the face of things, our resultant knowledge of the conducting of such Conferences and the contacts made there will be immeasurable.

The great lesson from this appeal is that when the Amateurs of Australia realise an ideal is worth fighting for, they will give their support to the cause. F.E. once again extends its thanks to each contributor and to the many officers in Divisions who gave their time and energies to administer the fund.

The list below acknowledges the contributions received to the 20th September:

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£12.4/0/- North Coast Zone, N.S.W. Division.

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## EDITORIAL

(Continued from Page 1)

other than the Amateurs should expect the co-operation of the t.v. viewer in eliminating interference which, in other than perhaps fringe areas, should be relatively simple if the Amateur transmitter is operating correctly. Therefore public relations is the most vital key to the problem as we see it, and it is up to every Amateur who becomes involved in i.v.i. cases to remember first and foremost the Amateur's Code.

This won't always be easy for we are experienced, from the early broadcasting days, with the attitude adopted by some members of the public. But we must look always first at their point of view and in a gentlemanly way see what can be done about it.

Currently some t.v. viewers suffering interference from Amateur stations neither approach nor permit the Amateur to carry out the necessary tests to eradicate interference, nor do they approach the Radio Interference Branch of the Postmaster-General's Department. They write or call directly on their local Member or a Minister himself. The result can be both swift and sure . . . the Amateur will be told to stay off the air during t.v. hours. It's happened in other countries, so it's nothing new in the Amateur service.

Unfortunately, the Amateur doesn't always know he is causing interference, particularly where the t.v. viewer will not co-operate, and he will be sometimes blamed for interference even when he is not on the air or hasn't been operating during t.v. transmission hours anyway. Of course, it's not fair! But that's the problem you are going to come up against. So what to do about it?

First and foremost, remember the Amateur's Code in dealing with the public. Secondly, see for certain that your transmitting equipment is not at fault in any way whatsoever. Thirdly, when co-operation is forthcoming from the t.v. viewer, see that your tests are carried out during test pattern transmission time and not during programme time; in this way you will not interfere even if your immediate t.v. viewer is co-operating with you.

In the Divisions of the Institute, T.V.I. Committees will be formed where they don't already exist and they will be asked to forward complete details of all interference problems to the Federal Executive. The Federal Executive will suggest to the Postmaster-General's Department that a committee be formed representing all frequency users involved in t.v., manufacturers of t.v. receivers, and other electrical equipment guilty of interference if this is possible.

**Remember the Amateur's Code.**

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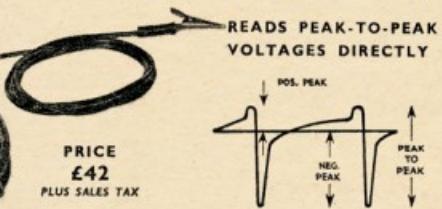


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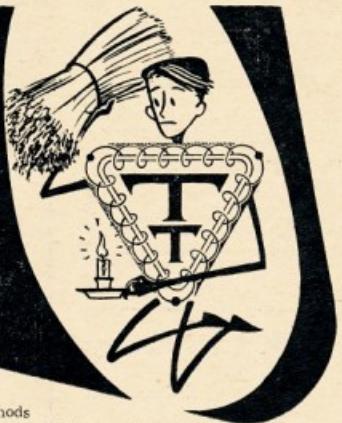
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 2CX—V. E. Tievery, 7 Wheeler St., Edgewell.  
 2DO—P. J. Peake, 7 Wheeler St., Carlton.  
 2UF—W. N. Barnier, 6 Bonner Ave., Manly.  
 2VR—R. M. Marsden, 43 Houston Rd., Kingsford.  
 2APF—Divisional Signal Regiment, Army Wireless, Training Depot, Park Rd., Paddington.  
 2AX—R. M. Barnett, C/o. O.T.C. Radio Station, Brissbane.  
 2AKB—J. A. Bonnington, 31 Elouera Rd., Avoca Beach.  
 2ALS—R. L. Longworth, 1 Holdsworth Ave., Wallstonecroft.  
 2AQH—J. T. Milton, Flat 1, Cr. Brown & Marksman, Armidale.  
 2AXB—E. Carruthers, Station: "Headingly," 1899, Elizabeth; Postal: Box 1189, G.P.O., Sydney.  
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 0IB—I. K. Black, Macquarie Island.  
 0IT—I. N. Thomas, Macquarie Island.  
 0JM—J. D. Molle, Davis.

### CHANGES OF ADDRESS

- VK—  
 New South Wales  
 2DR—N. Wilds, 153 William St., Bathurst.  
 2IN—R. C. Meadows, 2 Fortescue St., Chiswick.  
 2MK—L. A. Elphinstone, 34 Maccella St., Kingsgrove.  
 2OH—H. D. Howe, 50 McIntosh St., Gordon.  
 2PR—R. J. T. Price, Lot 4, Power St., Plumpton.  
 2YM—R. Hancock, 15 Boundary Rd., Fennant Hills.

- 2ZD—W. J. Leetch, 38 Cliff Rd., Epping.  
 2AF—J. A. Fisher, 2 R.A.R., Holsworthy.

- 2AR—J. H. Pickles, 611 Princes Highway, Kogarah.

- 2ACY—A. G. Mulcahy, 48 Louis St., Padstow.  
 2ADG—G. F. Griffiths, 5 Carrington Rd., Kemps Creek.

- 2ADQ—D. Barnes, 76 Gordon St., Manly Vale.

- 2AEH—A. J. Moralee, 25 Elmore St., Albany.

- 2AGE—G. A. Dowse, Pine Ave., East Ballina.

- 2AJM—A. H. Bull, 55 Kookaburra Ave., Killara.

- 2APA—F. A. Ashby, "White Cottage," 14 Bilgulla Ave., Newport Heights.

- 2APN—R. J. Williams, 100a Pittwater Road, Zetland.

- 2ARA—W. N. Short, 88 Auburn Rd., Auburn.

- 2ATU—E. M. Cragg, 435 Coal Point, via Toronto.

- 2AVJ—B. W. Jones, 21 Bell St., Blaxland.

- 2AXM—G. B. McDonald, 5 Bell Ave., Lindfield.

- 2ZC—V. W. Green, Bridge Ave., Glynns.

- 2ZC—R. F. Lopez, Married Quarters, No. 337 Lighthouse Rd., Holsworthy.

- 2ZDS—W. A. Sargers, Flat 2, 8 Dundas St., Coogee.

- 2ZEA—J. Ashby, Byng St., Holbrook.

- 2ZJ—J. J. Jeffrey Doyle Lane, Muswellbrook.

- 2ZMB—B. J. O'Sullivan, 62 Kellet St., Kings Cross.

### Victoria

- 3KG—S. C. McLean, 208 Balcombe Rd., Caulfield.

- 3HW—A. N. Horwood, 45 Edmonds Ave., Ashburton.

- 3JH—L. J. Richards, 1 Maria St., Nunawading.

- 3JV—D. A. Knight, 1 Phostria St., Doveton.

- 3KS—R. W. Prosser, 8 Brynmoor, Bentleigh.

- 3KU—B. D. Clark, Station: P.M.G. Radio Receiving Station, High Park, Kilmore; Postal: P.O. Box 8, Kilmore.

- 3MJ—W. L. Matters, 24 Waihoro Rd., Rossmore.

- 3OD—D. D. Watson, 5 Caerleon Court, Heidelberg.

- 3VK—M. F. Spiller, 11 Harrison St., Ringwood.

- 3AM—A. H. Sengotta, 71 Burrinjuk Rd., Caulfield.

- 3ABX—D. B. Bond, 11 McKenzie St., Colac.

- 3ADG—G. W. Kidson, Rutland Ave., Mount Eliza.

- 3ADR—A. R. Roy, Flat 3, 648 High St., Armadale.

- 3AGE—M. G. Exam, 18 Crawley St., Warrnambool.

- 3AGH—T. E. Page, 27 Nolan St., Niddrie.

- 3AHJ—R. J. Harrison, 304 Waterloo Rd., Glenroy.

- 3AHW—A. W. White, 56 Ross St., Dandenong; 3AJ/T—H. R. James, C/o. H. E. Masson, Lower Dandenong Rd., Braeside.

- 3AKM—L. L. McInnes, 7 Gwenda Ave., Blackburn.

- 3APC—N. Webb & District Radio Club, 17 College Grove, Black Rock.

- 3AWZ—M. B. Zimmer, 18 East India Ave., Nunawading.

- 3AYR—F. H. A. McClymont, 1 Everard Drive, Werribee.

- 3ZFI—K. G. Bridger, 132 Nott St., Port Melbourne.

- 3ZF—D. J. Goss, 19 Fitzgibbon Crescent, Caulfield.

- 3ZFT—R. G. Terrill, 6 Clematis Ave., Wenvoe.

- 3ZGS—M. Subocz, 126 Hill Rd., North Balwyn.

- 4EP—E. J. Parry (Rev.), 207 Borthwick St., North Ipswich.

- 4FE—A. R. Burton, Normanton.

- 4TY—R. W. T. Tyas, Fitzroy St., Warwick.

- 4UZ—C. P. Simms, 25 Forster Ave., Sandgate.

- 4VE—E. V. Venet, 25 Forster Ave., Sandgate.

- 4XP—J. Thompson, Natural Bridge, via Nerang.

### South Australia

- 5AV—A. E. V. Molineux, 7 Salak Ave., Marion.

- 5FQ—B. A. Scott, 31 Forrest Ave., Hawthorn.

- 5KR—V. M. Reeser, 2 Leicester St., Parkside.

- 5OX—J. C. Stewart, 38 Stephen Ter., Gibson.

- 5PL—J. G. Porter, 21 Wangary Ave., Seaview Downs.

- 5TX—R. P. Tuck, Lot 21, Balmoral Rd., Deranour.

- 5YQ—E. A. Charles, 41 Grey Ave., Hyde Park.

- 5ZAN—M. A. Goodridge, 45 Prospect Rd., Prospect.

- 5ZCX—B. H. Wall, 224 Seaview Rd., Henley South.

### Western Australia

- 6AT—A. T. C. Hanson, The Esplanade, Esperance.

- 6CJ—C. F. Jaescke, 46 Purslowe St., Mt. Hawthorn.

- 6EA—A. L. Entwistle, Lot 94, Wangalla Way, Kalgan.

- 6FH—F. A. Hull, 17 Weld St., Claremont.

- 6KH—W. K. Hobby, 12 Balle St., Motman Park.

- 6SKJ—B. H. Gates, Station: 5 Drew St., Mira Mar, Albany; Postal: C/o. G. Gates Radio Sales & Service, Peel Place, Albany.

### Tasmania

- 7DK—D. H. Kelly, C/o. Staff Quarters, Post-inna.

- Territory of Papua and New Guinea

- 9GW—G. K. Williamson, Telegraph Office, Samarai.

### CANCELLED CALL SIGNS

- VK—Australian Capital Territory

- 1VV—R. M. Maraden, New South Wales

- 3GD—K. H. Hatton; 2LA—L. A. Lawson; 2MF—C. M. D. L. D. Armstrong; 2XM—W. H. Marshall; 2PA—W. S. P. A. Parker; 2ZC—L. C. Nation; 2AO—R. A. Parker; 2AZ—W. R. Short; 2AQG—J. L. Gutthberle; 2AYD—D. E. Evans.

- 3NS—J. E. De Cure; 3NW—W. E. Bowtell; 3ADP—J. G. Du Faure; 3AJ—W. R. Ion; 3AC—J. G. Clay; 3AM—R. E. A. Grigson; 3ANE—R. R. Longworth; 3AJ—T. J. G. Cunningham; 3AE—V. E. Avenell; 3AWL—L. Western; 3ZAP—P. Woodward.

- 4AE—R. A. A. F. Radio Club; 4DE—B. R. J. T. Pooley; 4KN—C. F. Peddel; 4KR—C. C. E. Christensen; 4ZAB—T. E. Meredith.

- 5BM—R. R. Matthews; 5ZL—L. A. Lock.

- 5ZAH—R. G. Henderson; 5ZAT—H. McTeigue.

- 5ZBU—M. H. Bone.

### Western Australia

- 6ZAI—A. J. McCarthy.

### Tasmania

- 7KM—K. G. McCracken.

### EARLY COPY DATE

So that this magazine can be printed prior to the printers closing down for annual holidays, all copy for the January issue is required at P.O. Box 36, East Melbourne, C.2, by 1st December.

Correspondents are reminded that the closing date for copy for other months is the 8th of the month preceding publication. Copy arriving after that date may not appear.





# ORYX

(LOW VOLTAGE)

## MINIATURE SOLDERING INSTRUMENT

*A must  
for  
Transistors*

(actual size)



### PROTECT YOUR TRANSISTORS WITH ORYX

There is a danger of damage when soldering to transistor leads, due to A.C. leakage currents. The use of a low-voltage transformer supply, with earthed secondary is therefore recommended. Take care also that too much heat is not applied to flying leads. The ORYX iron, and a heat-sink such as heavy pliers gripping the lead between the contact point and the transistor, will ensure protection.

- Fast heating element, ready for operation in less than one minute.
- Exclusive design features resulting in universal acceptance of ORYX as the standard miniature soldering instrument.
- The ORYX long life element will outlast several bits which are of tight push-on fit.

Bit Dia.:	Volts	Watts	Nett Weight	Length	Recommended Use
Model 6 1/16" (Fixed)	6	6	0.25 oz.	6"	Electrical measuring instrument fine assemblies, hairsprings, R.F. pick-up and speech coils, hearing aid sub-assemblies, etc.
Model 6a 3/32" (Push-on)	6	6	0.25 oz.	6"	As for Model 6 (for extremely delicate work only).
Model 9 5/32" (Push-on)	6, 12, 24-27½	8.3	0.25 oz.	6"	Hearing Aids, Radio and TV Sub-assemblies, Coils, Electronic Instruments, Model Construction, Electro-Medical, etc.
Model 12 3/16" (Push-on)	6, 12, 24-27½	12	0.5 oz.	6.25"	Radio, Television, and Telecommunications assemblies.
Model 18 3/16" (Push-on)	6	18	0.75 oz.	7½"	For heavier work, heat capacity equivalent to that of most 80 watt soldering irons.

### MANUFACTURERS SPECIAL PRODUCTS PTY. LTD.

47 YORK STREET, SYDNEY

MELBOURNE : Amalgamated Wireless (Australasia) Ltd. ADELAIDE : Newton McLaren Ltd.

PERTH : Nicholsons Ltd., Carlisle & Co. Ltd. HOBART : Noyes Bros. Ltd. BRISBANE : Chandlers Ltd.

MSP3.5R

Amateur Radio, November, 1959

# NOTES

## FEDERAL

### V.H.F. CENTURY AWARD

Quite a long time ago the Federal Council of the W.I.A. approved of the introduction of a V.H.F. Century Award (Certificate) to be given to those who submitted proof by QSL cards of having made one hundred contacts on the v.h.f. bands.

Because of lack of finance the project has been "shelved" for some considerable time although initially a quantity of high quality certificate blanks were imported from the United States of America and are still in the possession of the Federal Executive.

At one stage members were called upon to submit a suitable design but no efforts were forthcoming. Since it is now proposed to continue with this project designs will be accepted. Anyone who would care to try their hand at designing a suitable certificate now has the chance as £5 will be paid for the design finally chosen. The lithograph design on the blank certificates is rose-red and a sample of this will be forwarded to anyone seriously interested to work out a proposed v.h.f. design to be overprinted on the blanks. Please write and request a blank certificate to Mr. Straughair, Federal Executive, W.I.A., Box 2611W, G.P.O., Melbourne. In the event of a rush we might have to limit the number of blanks available for design purposes so be early!

When a design is completed it must be returned to Mr. Straughair who will submit it to the Executive. The design forwarded by any person will remain the property of the Institute. If and when not ultimately chosen for the V.H.F. Century Award is subsequently used as a basic idea in part or in whole for any other Institute award, a fee of £5 will be paid to the designer. Please note that your name, call sign, license number and address is clearly printed on the back of your design. Multi-color design will be acceptable although it is suggested that cost be considered when designing if more than one or two colors are proposed. Don't hesitate—do it now!

### I.T.U. GENEVA

Reports from the I.A.R.U. indicate that three of the principal officers of the I.T.U. Conference, elected during the first plenary session in August, are Americans. Charles E. Veseac, is chairman; Juan Ante, LUPULUS is a vice-chairman; and Gerald Gross, HBBIA (formerly W2GGM), acting secretary-general of I.T.U., is secretary of the conference.

The second plenary meeting in August, the I.A.R.U. was one of the 16 international groups admitted to the conference.

John Clarckson, GCL, and Per-Anders Kinnan, SM5ZD, represented the Union at the meeting and for some weeks after, however it is expected that they will be relieved later on by other representatives.

Secretary Budlong and A.R.E.L. assistant manager Hunton are "Industry Members" of the American delegation, and have been assigned to the delegation's all-important group working in that capacity in committee 4.

Early September the committee had completed preliminary examination of the spectrum below 4,000 Kc and had commencing an initial exploration of proposals concerning the spectrum from 4 to 21.5 Mc.

### CONTEST CALENDAR

Compiled by W.I.A. Fed. Contest Com.



### "CQ" WORLD-WIDE:

CW—Last week-end Nov. '59.

### R.S.G.B. 21/28 MC. PHONE CONTEST:

Dates: 0700 hrs. Sat., Nov. 21, to 1900 hrs. Sun., Nov. 22, 1959.

Rules: See "A.R." October, 1959.

The chairman of committee 4, Gunnar Federsen, of Denmark, noted in passing that the various proposals appeared to divide the delegations into two opposing camps—those who wished to have unchanged the present allocation in the high frequency band, and those who wished to make additional space available for broadcasting, mostly at the expense of the fixed service.

### TWO NEW MEMBERS ON FEDERAL EXECUTIVE

The Headquarters Division of the W.I.A. has endorsed the co-operation of the Federal Executive of two new members, Mr. David Rankin, VK3SQV, and Mr. Tom Straughair, VK3ZIT.

Mr. Rankin was formerly holder of the Limited P.C.P. and without his chief interest in the v.h.f. hobby he quickly passed his Morse code to gain the full transmitting license. As an experienced v.h.f. amateur he will represent the v.h.f. groups on the Federal Executive and this representation will be the duty of whomever is chosen by v.h.f. licensees all over the Commonwealth will be dealt with. V.h.f. licensees are therefore invited to raise any queries through their Divisional Federal Councillor and Mr. Rankin will be pleased to present the problems to the Federal Executive and advise of any decisions reached.

The Institute has grown considerably over the past five years or so, and with its growth comes the work. To cope with this and catch up with what work of necessity has had to be left "undone," the Federal Executive is being reorganized so that the work is more equitably distributed. This may take a little time, but it is envisaged that the results will eventually benefit everybody. In this arrangement Mr. Tom Straughair, VK3ZIT, will be undertaking various outstanding projects and these will be notified to Federal Council and within these columns from time to time.

### COMPOSITION OF FEDERAL EXECUTIVE

Federal Executive is composed of the undermentioned members who carry out the various appointments within the Executive:

President ..... Max Hull, VK3ZK  
Vice-President ..... George Glover, VK3AG  
Asst. Sec./Bus. Officer, Bill Mitchell, VK3UM  
Treasurer ..... Bob Boase, VK3NT  
Publicity Officer ..... Len Bunton, VK3ZB  
V.H.F. Officer ..... David Rankin, VK3SQV  
Project Officer ..... Tom Straughair, VK3ZIT

George Glover also holds the appointment of emergency co-ordinator in addition to that of Vice-President.

### CANCELLATION OF PRIVILEGES

In June last, A.R.E.L. received information that the Government of Ethiopia had cancelled all Amateur Radio Licenses with the exception of one which is held by a member of the Royal Family.

### JAPAN AMATEUR RADIO LEAGUE

This Society now has a membership of some 7000, and became an incorporated society at its annual general meeting held in June. Kenichi Kajii was elected chairman of the Board of Directors.

The meeting was addressed by the President of the Society, Red Green, who praised the role played by JAS in rescue work in disasters and citations were given to those who made outstanding contributions to Amateur activities.

### MARITIME MOBILE

Liberian Radio Service has granted Maritime Mobile privileges to Amateurs aboard Liberian ships. This concession was obtained by the Union Schweiz Kurzwellen-Amateur.

### FEDERAL AWARDS

#### KERMADEC ISLAND

Credit will now be given for contacts with ZL1ABZ on KermaDEC Island. Cross-band contacts will not be considered for credit purposes.

G. Weynton, VK3XU, Manager.

### NEW SOUTH WALES

The September general meeting of the N.S.W. Division was held at Science House, Gloucester St., Sydney, on 25th Sept. The meeting

### V.H.F. NOTES

At the time of going to press the v.h.f. notes from Frank O'Dwyer, VK3OF, had not arrived.

opened at 8 p.m., the President, Dave ZEO, presiding. Three overseas visitors were present, namely, OH2MT, DL1SJ and Ted Klein. They were presented with a Call Book in commemoration of their visit to our meeting. Arrangements for continuing the work were made from ZHT, ZAPQ and 2WS. Following the usual procedures, 20 new members were admitted to the Division, making a total membership of 1,169.

A letter from the P.M.G. Department was read, regarding the severe interference being experienced on 22 Mc. The Department requested the co-operation of our members in identifying and locating the signal causing the QRM. Reports on this matter will be appreciated.

A report on the Slow Morse Transmissions was made. These transmissions are conducted on 3532 kc. each evening at 7.30 p.m. under the call VK2AWL. We are pleased to have a roster of operators from all over the State to contribute to our service to others. It is to all reports received members are most pleased with the efforts of those taking part. Undoubtedly this will assist many of our Associates and Limited ticket holders to the full call.

The lecture for the evening was delivered in very good performance by Bill ZEAR and dealt with v.h.f. and u.h.f. techniques. The material of his lecture and the apparently never ending supply of v.h.f. equipment held the interest of the gathering and a goodly number of questions were asked at the lecture. The date of thanks was passed by acclamation on the motion of ZZR, who claimed that the v.h.f. bug had bitten after many years of activity, and that we feel that as a result of such a lecture that many will follow in his path.

The Convention Minutes were then discussed and all were ratified with the exception of the item dealing with the proposed reservation at Easter 1960, which had been suggested to deal with the report on the Geneva Convention.

The meeting finally closed to allow the usual adjournment for coffee and the rageweb which continued until lights out at 11 p.m.

We hear that Crief ZXO of Coffs Harbour, is ill again and we hope that he will be much recovered by the time this issue reaches members. No doubt at a time like this, Crief would like to see or hear from his many friends made over many years of activity. The best to you, old man, from all.

We are sorry to report the loss suffered by Fred ZBN of his beloved wife passed away 5/10/59. Mrs. Treherne will be remembered by many of the older chaps as being an inspiration to all, and we would, by this means, like to convey to Fred, a Past President of this Division, our deepest sympathy in his great loss.

### THE SOUTH WEST ZONE CONVENTION AT NARRANDERA

The Six Hour Day holiday weekend, Oct. 3-5, saw the date of a very enjoyable Convention for all members and wives of the Narrandera Radio Club. Registrations exceeded the 100 mark. Readers may not be aware that the Narrandera Radio Club is composed of a number of Radio Amateurs, residing in the town, who are members of this Division.

The function was attended by Amateurs from all parts of the zone, Bob SML, Eric 2DY and Peg, and others from Sydney made the trip. Following registration in the afternoon, the Convention dinner was held at the Hall of the C.W.A. Hall which was attended by the whole gathering including the wives and children, who were amply catered for. An enjoyable programme followed consisting of an amateur film and films, including one on the 1960 Olympic Games. Supper was served—the ladies officiating.

Sunday was devoted to a field day and despite the threatening conditions, the programme was run to time. The all band scramble was won by 2P9, second prize went to a draw between Stevens, 2ZP, and 2AZL. Hunt and Tx Hunts were won by Bob ZZW and Lindsay ZZLS, both of Wagga; the second hunt by Eddie 1VP, of Canberra; Bob ZZW being second. Blind Fold Tx Hunt was won by Bob ZECN, and the XYL of 2RS won the ladies section of the hunt.

### HUNTER BRANCH

The September monthly meeting was well attended and a varied and interesting lecture was given by Frank 2PX on various Television aspects. On the side, Sunday 22nd September welcomed back after his long stay in Melbourne and two new members Ian Fyfe and Doug Dickson were welcomed into the fold as associates. Frank promised to continue his lecture at a later date, a statement which was received with enthusiasm.

A couple of pars for the red face department: Who was the guy, south of here, who spoke into a dead mike for five minutes before he woke up to the fact that all meters registered zero? And who was the fellow who had a 40-watt amber bulb shining brightly. Also we wonder who was it who for many months tried desperately to charge his battery until he discovered that a wire had come loose inside his charges.

Dieting is the latest craze with 2ZL, 2AXX and 2AQR, of course the latter doesn't really need it.

The general meeting of the Branch will be on Friday, Nov. 9, at the usual place, but I doubt if there will be a social meeting at 2XTC's as Bill should be on the high seas by then.

#### Anual Dinner and Field Day

The second post-war Dinner and Eighth Annual Field Day were held on Oct. 3-4, and despite the continuing bad weather an impressive roll-up and a good time was had by all. Again it was gentlemen only and 83 were seated before a sumptuous repast. President Lionel 2OCB welcomed the visitors.

With them were quite a few old-timers who were reared by the Old Man and did their teeth on the Wouff Hong, the accentuation was on the four old-timer guests, namely 2HC, 2AXH, 2ZL and 2AQR.

VK3KBR-Ray received his license in 1926 and was quickly amongst the DX, receiving the second certificate ever issued for W.A.C. phone. This was in 1930. Ray was beaten by the master of VK3KBR, 2OCB, who in 1931, obtained the first VK3-28 MC two-way phone with VK3QB and in the same year received the W.I.Q. Certificate of Merit for being the first Amateur in the British Empire to W.A.C. on phone. During 1930-31 Ray acted as official W.I.Q. broadcast station.

VK2ZL-Bill's first license was in 1912 when as QDX, working in Siberia, 2-inch dipole, OAR coil, he made such a mess of the ether that I believe the Russian jamming stations took over his gear. Due to many reasons, Bill was off the air until 1934, but has been active ever since. Bill joined VHF in 1936, and in 1937 and in 1938 received Life Membership from that Institution. At present he is retired and is kept busy mowing lawns, mending clocks, etc. VK3AXH-Al, the grandfather of radio all for fun, a license from somewhere or other in 1908 and in 1911 Wal went to the Antarctic with the late Sir Douglas Mawson as radio operator. Boy, did Wal tell stories about that expedition. In 1910 the Wireless Foundation Secretary of the Wireless Institute of Australia and at one time was Federal Secretary and President. For a while he had the call sign of 2YH, and about 1914 he became a member of the Amateurs, the urge returned and he disturbed the other under the call sign of 2AXH. Now retired, he spends most of his time about Wal is the King of Antarctica in the strictest sense and if there is anything that he can make he will make it—not buy it. In fact he does more experimenting than any other six chaps I know.

VK3ZC-Dick. Dick would not be at the Dinner and have very little to relate except the fact that he is now exclusively on 10 mx. God bless our wheel-chair chairmen.

In response to the toast to Amateur Radio and the W.I.A., Ray 2HC congratulated the Secretary, Gordon Sutherland, for the sterling work he did in connection with the Convention and hoped that the Hunter Branch would keep on with the good work. In response, Dave 2EO said it was one of his proudest moments to be able to be here and to thank Ray for the dinner he was giving, the one which is the closest to the world. What had been done by Executive can only be done by all members assisting and we could only progress if we assist in promoting interest of the younger generation—the school-boy. Dave also

Alan Fairhall, M.H.R. (VK3KBR), guest speaker at the Hunter Branch Dinner, discusses Amateur Radio matters with Lionel Swain, VK3CS (left), and Dave Duff, VK3EO (right).

thanked Alan Fairhall and his colleagues for what they have done for Amateur Radio over the last few months.

The guest speaker, Alan Fairhall, VK3KBR, spoke at length re the I.T.U., and congratulated 2WI and 2AWX in the manner in which they broadcast their opposition to the cuts in frequency. When he raised the matter of Parliament, he quite naturally mentioned both houses of the house, including Messrs Griffiths and Jones who were present at the Dinner. At present there is a clear indication that local opinion will be asked to comment further. Alan said that in his opinion the time has arrived when the control of Telecommunications should be taken from the P.M.G. and vested in a commission as in the United States, where the Amateur is at least represented.

The field day on Sunday at Blackall's Park was well suited to the blockers with a well-organized 2MC. Some interesting wins were by Jim 2PM with Kent 2ANU runner-up; these same two won the 144 Mc. hunt in the afternoon. The morning hunt was won by Bob 2ASZ with 2PM in second place. In the ladies' side, Helen Connor and Betty Hall won the ladies' pitch-potter; the younger girls' went to Helen Sprakes, while Jimmy Hall carried off the boys' prizes. The lucky numbers went to Mrs. Bailey and Norm 2ABP. Alan suggested no compensation that the quiz was won by Secretary Gordon Sutherland which was a fitting gesture on the part of lady luck.

Did anyone see Lee 2RJ and Stan 2ZDL put up the kite? Lee 2RJ for the scrabble only to have it blown away in the gale? They then put up the kite, but the wind dropped and so did the kite!

#### HISTORY OF GRIFFITHS RADIO CLUB

The first meeting was held on 21 October, 1952, when it was decided to form the Griffith Radio Club. The main consideration was to be that the club would be given to the Radio Amateurs to obtain the A.O.C.P. license.

The lectures were, for several years, given almost entirely by 2PL and to him go the number of members who have obtained their tickets. Recently 2PL has been ably supported by 2AXD and 2ACS, and to others to a lesser extent.

It has been found that the lecturing programme has thrown a heavy burden on the few, and this year we have been able to obtain a course of papers prepared to assist prospective Amateurs in the N.S.W. section of the W.L.A. The club is appreciative of this action as it is of great help to lecturers, enabling less experienced members to assist in the regular meetings.

The club has its own club rooms and has available two transmitters and two receivers, and works under the call sign of VK2AGJ. The meetings are held every Tuesday and film showings are held when members' families can attend. The President, 2ZEC, has been very helpful in sending his projector for these film evenings. He is supported by 2ZCN, the present Secretary.

The club is proud of its record of being instrumental in obtaining a license for members so many A.O.C.P. licensees. The complete list of members of the club, five of whom have left Griffith during the last two years, is: VK5 2PL, 2ZC, 2AXD, 2FS, 2VY, 2ADZ, 2NV, 2IIJ, 2AEB, 2ZQX, 2ADM, 2AYZ, 2ZEC, 2ZCN, 2ZJL.

#### ALBURY RADIO CLUB

At the time of going to press the Albury Radio Club is really getting organised on the job of training new Amateurs, a team of lads who comprise a large part of the total membership. While the course is being used and the enthusiasm of the senior members will be rewarded in the end by quite a few of these chaps attaining their ticket.

The club has decided for a call sign, and as practical exercises the students are being taught how to build their gear by building the club transmitter under the supervision of the instructors. This certainly is an excellent way to maintain interest in the younger members.

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#### VICTORIA STATE CONVENTION

The Tenth Annual State Convention was held at Stawell on Saturday and Sunday, 3rd and 4th October, and visitors from the surrounding districts welcomed with refreshments in the "Dungeon," at Bill 3AKW's building. Our thanks go to the ladies who assisted in the provision of afternoon tea, and to the members who came with their well-travelled long distances to Stawell.

The Convention dinner was held at the Commercial Hotel and we were honoured by the

presence of the Mayor of Stawell, also the Town Clerk, Shire President, Past Mayor and Past State President.

After the speeches were over the Mayor, Cr. Hallam, presented the Kinnear Trophy to Jim 3ABT, who accepted it on behalf of the winners—the South Western Zone.

During the two days of the Convention, the following topics were discussed: Commercial interference in the 40 metre Amateur band, Federation of the W.I.A., Disposals, and W.I.A. Constitution.

It was reported that there is very little chance of a civil defence organisation being set up in Victoria and so the possibility of official government authorisation cards for W.I.A. members is remote.

On Sunday morning a large group of Amateurs gathered at 3SHL's shack to put on the 3W1 broadcast, but unfortunately conditions on the 40-metre band were very poor and the coverage was limited.

An enjoyable picnic lunch was held in delightful surroundings at Hall's Gap; after lunch some disposals items were disposed of. In the afternoon the band was on 20 mx, the mountainous country producing some unusual effects on the signal. The winner was John SGAD.

#### NATIONAL FIELD DAY CONTEST

The Divisional Council has decided to award a perpetual trophy for competition between the zones and affiliated clubs of the Victorian Division in the N.F.D. Contest. The trophy, which is to be awarded to a team in the N.F.D. must forward the claimed score, being the sum of both the c.w. and phone scores, to the Divisional Secretary by the same date as entries are made with the Contest Committee. These scores will be confirmed with the Contest Committee.

The winner will hold the trophy for a period of one year.

#### NORTH EASTERN ZONE

Radio Australia seems to be the home of Ham or potential Ham. Besides the regular Ham you and I know, there are others who remain anonymous. There are many Hams who have had G calls when out here for further experience in radio transmission. They have VR call signs now, being Ted 3APU and Dick 3APZ, and if when you hear them you say "Aha, a short call, these are welcome to this zone." I hope that these two boys will be available to attend the Convention this month so that we will be able to welcome them in person. So what about it, Ted and Dick?

Another new call sign to me, anyway, is 3AEU (Alan), who is in the process of building a dual wave radio which I suspect will be extremely interesting. His spare time has been left for a tx. Bill 3AGG heard on 20 mx calling GS and on my frequency, too! Shame on you, Bill, I thought you an exclusive "Donald Duck" station by now.

Bruce 3AGG not very active these days, even missed by W's on the band, but since Bruce has a building the programme lined up, I can't help him being his appearance on the band very much. "Holy smoke, I forgot! I had a shack with you Bruce." Not there, but a beaut. W signal was, how I get diverted, even now country roads.

The salt mines of Benalla have mail out only twice a year so nothing from that quarter. If space allows, and the Editor permits, I am about to embark on a policy speech why I should NOT be the State Correspondent. I'll be brief. QRL and QRU.

See you at the Convention. Remember, ATTEND TO DEFEND! 73.

#### MOORABbin & DISTRICT RADIO CLUB

At the general meeting held in September it was decided to take advantage of Morris 3AMA's offer to put on a film night, and a film depicting present day China will be shown at our hall on 10th November. We will conduct a "White Elephant" night instead of our practical evening on Friday 9th November. So any members who have surplus gear, bring it along and we will be happy to sell it. The proceeds of the proceeds will go to club funds.

As was anticipated, the gala opening night was a huge success, thanks to members bringing guests, and mainly to Max 3DF's generosity in supplying the excellent supper, and the liquid refreshments—without which there would not have been nearly as much good cheer.

Lack of notes for last month's magazine was due to the State Convention in Sydney, N.S.W., to Surfers Paradise and return. A Type 3 Mk. II was taken and some fine contacts from various places were enjoyed.—3LC.

## QUEENSLAND

### BRISBANE AND DISTRICT

Sorry for the lack of notes over the last few months and we will try to make up for it in the future. The Divisional Council had quite an unexpected resignation at the September Council meeting. Stan 4SA had to resign from the club because of the ill-health of his XYL who is to have an operation in the near future. A little bird told us that Dave 4DP will be doing the job, so there isn't anything to worry about. The President's job went to the Vice-President, Bruce 4ZBZ. We are very sorry to lose you Stan, but we know you will still support us to the fullest. Mrs. 4SA is well known to the Brisbane gang and all the chaps who did Stan's course have a soft spot in their hearts for her. By the way, Stan's resignation also included a slight membership and there is quite a few blokes in Brisbane who became Hams as a result of Stan's class. By gosh, we're going to have a heck of a job getting a replacement for the Class A Master.

As you have no doubt heard, Council has given the "go-ahead" for the formation of branches throughout the Division and, at the October meeting, a committee will be formed to handle everything concerned with this important business.

My old pal, Bob 4RW, asked, in his September Townsville notes, if the "one-eyed monster" was the reason for the absence of the Southern Queensland gang from the bands. Well, Bob, the T.V.I. Committee assures us that they haven't had any trouble yet and I think the absence of Brisbane Hams from the bands is caused by t.v. and not t.v.t. The stations put out such tremendous signals and our 100 to 150 watt rigs only put out microvolts and microcurrents. I have just checked my rig on all bands from 86 through to 10 with a monster in my own home and didn't see or hear any t.v.t. When the t.v. stations were off the air, I did put some nice modulation bars on the screen on Channel 2. This station was only on 25 kw. on the channel with test patterns and when we came on the air the modulation bars were nowhere to be seen.

You know, my electric face scraper caused more trouble than my rig and when the t.v. stations are on, you can't hear in VK2 and VK3. I'll either have to go back to a safety razor or grow a beard again. 4EL will tell you how ghostly 4FR looks with a beard. No, Bob, the blokes down here are probably spending their evenings curving up in front of a t.v. receiver watching the continuous extermination of cowboys by guns (only in the shape of the "goodies") which fire 40 or 50 shots per second. (Our experience down under is that you have to get away from the dead cowboys and Indians from behind the t.v. set each night before retiring.—Editor.)

Frank 4ZK told me about a t.v. salesman who was demonstrating t.v. to a family who live near his QTH. Dad, Mum and all seven kids were at the front gate to help the sales man get the receiver into the house. The youngest kid, a little chap about four, piped up: "Let me carry the antenna; I always carry the antenna!"

You 40 metre inhabitants have probably heard Frank 4FN back in his old territory and I might add that he is still there now. We also have had some of the Ipswich boys attending lately and I, personally, have often wondered why they haven't been regular in the past. After all, it's only 25 miles and Mick 4AC comes almost that distance to every meeting.

Well, it's good to be back on the job and I'll keep my note book handy to jot down notes. Cheers from 4PR.

### TOWNSVILLE

The monthly meeting held on Sept. 24 at the University Club was a success. In fact, a couple who have been missing lately rolled along. The chairman, 4PS, went to great trouble to explain the circular he had sent to all Amateurs for a radius of 300 miles, inviting them to a get-together hamfest of the long distance type. Reps. from Lo and behold, only one Amateur replied by letter, thanking for the invitation and apologising that he would not be present. While it clashed with the "Industries Fair" station to be held in Cairns, the card was received from the far northern boys.

Claude 4UX brought along two new associates from Ayr and mentioned the fact that his classes were on the way with nine hopefuls, and the XYL Jess. I hope so. Claude will get used to the club open with the coveted first arrivals. Frank 4FP spoke of the local class of which 12 attend, including

three XYLs. He is certain all will stay the distance and hopes all will gain the coveted A.O.C.P. As Frank will be going on holidays next month, Bill 4ZBE will take over class manager responsibilities and in the New Year others will be appointed. The club wish both classes 100 per cent passed.

Band openings are beginning and 10 metres has a few callers now, 15 and 20 metre bands are good while they last, and now summer is arriving, great things are expected. On 50 Mc. the nightly openings to Japan are continuing, also night openings to Australia. Jack 4AK has been heard calling 8M2DQ, so we are all poised for the break through from Townsville when the telephones will ring madly to indicate all is well.

Erie 4EL can be heard in the wee small hours working the DX while all good people are asleep. John 4DD busily painting the tower before erection; going to lay 'em with new tower and s.s.b. Mike 4OM in trouble on 144 Mc. due to the fact he was bitten by all things that Claude 4UX tampered with the chassis drawings. Ken 4ZAK on holidays and still maintains sked with Vern 4LK on 144 Mc.

Speaking of holidays, I will be away from QTH from 14th October to 14th December. John 4ZK (Oct. 14th) Adelaide (Nov. 2-8), Melbourne (Nov. 8-13), Sydney (Nov. 14-22) and arrive in Brisbane on Nov. 22. Hope to see as many of the gang as possible.

## SOUTH AUSTRALIA

The monthly general meeting of the leading Division of the W.L.A., to wit, VK5, was held in the clubrooms to a capacity gathering of members, all of whom had come only for the privilege of hearing the convention items read out. Radios 4DX and 4ZU were the only ones ratified in the record time of 30 minutes, and the audible sighs of relief from the members at this conclusion bore ample proof of their interest in all the items.

A technical lecture was scheduled as next on the programme, and in view of some uncertainty as to who was the lecturer, Gordon SXU stepped into the breach and gave a very interesting and instructive talk on the modification of the 4DX for dot dash sideband. Gordon's ability as a lecturer is so well known that any words of mine in commendation would be superfluous—well, any way, they would be unnecessary. Les SUX or a very fair Hawker proposed the vote of thanks and added the fact that with all the new improvements such as single sideband double sideband, etc., etc., it was about time that something was done to improve his middle band whilst I would be the first to agree with him on my amendment motion. I must tell him that if he exercised like me, it is possible that he might some day have a figure like mine. They don't call me the Rose Park Apollo for nothing!

Now, let's get digress, general business brought up was mainly the matter of the policy of the Housing Trust and the erection of serials by members of the W.L.A., and it was decided that Council should make the necessary enquiries.

John 5JC spoke on the matter of W.L.C.E.N. and the fact that although some 23 M.W. m.t.s. are not available, reference is made to the purpose of using them in W.L.C.E.N. It is only with difficulty that five or so active members can be coaxed on the air for the Sunday night roll-call, etc.

The meeting closed at the witching hour of 10.30 p.m. officially, but goes without saying that many unforseen events closed the meeting. I hope this summary of the meeting is at least somewhere near accurate because I have an awful confession to make. I was not present at the meeting and I secured my information from Gordon. To tell the truth, my son-in-law twisted my arm in such a way I agreed to go fishing with him all day, and when I returned my XYL lifted me up and kissed me on the forehead, and said how tired I looked and perhaps I had better not go. Now I'm afraid I'm not telling the whole story, but whilst waiting for the fourteenth course at dinner, I fell asleep and she carried me up to bed, tucked me in, put out the hurricane lamp, and crept out of the tent. It was very, very cross when I woke up the next morning, but what can one say when the rolling pin is so handy? (Remember the old proverb, "Dix Before Dishes!!"—Editor.)

Head of 4VO was in town and had 3DS, in concert one Sunday recently, and, boy, has David got a Scotch accent! If John 5JW ever contacts him they will never separate them. I was so taken up with the accent that I could switch off 1 with 2, but I had one like it, I would get me a job on that fangled idea t.v. and I bet I would get all the

fan mail in the world. Nice to hear you Dave, hope we contact someday. Thanks for the info on the new radio, I'll be sure to let the others green with envy, especially Norm Colman.

Jim 5JB is a new one from Leigh Creek, which to the unininitiated is a low-cut coal mine to the North of Adelaide. He was using a Commando t.v.-modulator, feeding a random length aerial on 7 Mc. when I heard him. Welcome Jim, good to have you in the air. Speaking of Leigh Creek reminds me that Tom 5AQ is still overseas but is expected back very soon. This will be two stations from up there, and although it will not be the Northern Territory, it is still a long way toward the North.

Looking idly through the new Call Book this week I got quite a shock to see the call of SHY jump out at me. I checked up to see what it meant and found that it is a misprint and should read SZBY (Lance). I feel sure that good old Doug would have been the first to wise-crack about this error in no uncertain fashion.

John 5JW is at the moment engaged in a mighty struggle for supremacy with the one-eyed monster—not you, Rae, sit down. He is trying his hand at building a t.v. set and obviously enjoying it. Naturally, this mighty effort leaves little time for his first love, Amateur Radio, but we have not lost hope as yet.

Charlie 5ON is on board on what good signs each Sunday morning. When heard here was in QSO with Joe 5JO, but as Joe was surrounded by welders, sparking insulators, pole transformers blowing up and other sundry noise, the contact seemed to be a little one-sided. If the operator of the welding machine could have only heard Joe's description of those people that used welding machines on a Sunday morning, he would have gone immediately to his parents and asked several pertinent questions.

Hurtle SHW apparently is well satisfied with 14 Mc. because he sticks to it like glue. In view of the fact that on the two occasions he was heard at my QTH he was in contact with U.S. and K.W. respectively, can I say a big "Hooray". Doc 5MD is still flourishing and active in Amateur Radio with his 3.5 Mc. code classes on Sunday nights, his disposal duties, his Council duties and also still bears the grand responsibility of custodian of the instruments. He still tries to lure me into becoming a member at his guest house, but with more luck than judgment I am managing to elude the clutches of his minions! Only just, however.

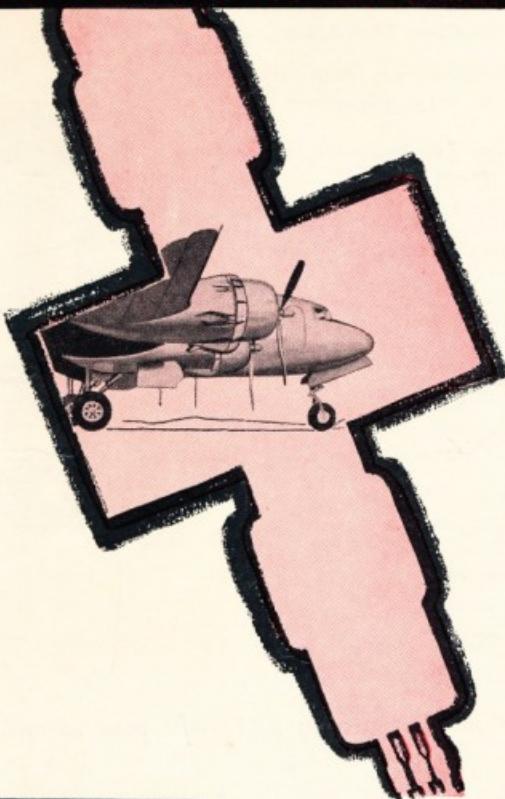
Johnny ex-5KO is back in VK5 from VK3 and if rumours are to be believed he is Postmaster-General, President of the Operational Committee, President of the P.M.G. and now with his usual perspic-purplics perspec-perspec-well, with his usual ability to nose out the fact, is pleased to announce that Johnny has retired from the P.M.G. and is now the Production Engineer for P.M.G. He has reserved the call 5KO; he expects to be in a house before long and it goes without saying that he has been listening on his beloved 80 m.z. Now that he is no longer an R.L. it will permit him to do the things he wants to do. "Now it can be told." Space does not permit me to tell the full story now, but be sure to secure your copy of "A.R." next month and read the true story how a courageous and gallant leader of the VK5 fraternity once succeeded in pulling the lion's tail, and got away with it.

There was a ring on the nuclear atomic atomic pile doorbell of the b.b.s. the other night, and I was talking to the manager of the best broadcasting station in the state) and when I pressed the talk-back button and said in my usual polite manner, "What do you want, mug?" a quiet well spoken voice said, "It's a carrier pigeon from the G.I.'s Gibson, a hundred miles west from the announcer's pocket. I rushed out to the door, and I have never seen a carrier pigeon look so much like Claude 5CH. Boy, was I glad to see him. Taking off his carrier pigeon disc and he came into the control room and we had a long chat, during which I extracted enough information about the S.E. gang to satisfy even me. Claude himself is down in the city on behalf of the Electricity Trust and says that the big wheels go round and will be here again after a fortnight. He naturally has not been too active but manages to keep 40 alive; is in the throes of the re-build that will end all re-builds (famous last words), and has also managed to see all of his mates in the city whilst here.

Tom 5JW is still keen on the DX and his own signals can be heard calling the DX at all odd times. John 5JA is keeper on the one-eyed monster than on Amateur Radio at the moment, but as he is interested from a business angle we can possibly pardon his lapses from good. Let me have word with the 100 legal. Leo 5UG is chasing the DX on 14 Mc. and is



## D M E   B E A C O N S



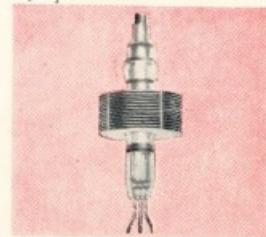
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